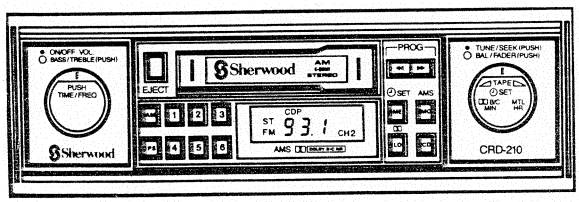
SERVICE MANUAL



CRD-210

AM/FM CASSETTE RECEIVER

Sherwood

Specification

● AUDIO SECTION

RMS OUTPUT/CH INTO 4 OHM,
- ⓐ 50Hz-20KHz, 0.5% THD ... 3.5Watts
- ⓐ 1KHz, 10% THD ... 20Watts

FREQUENCY RESPONSE ... 15Hz～30KHz

TONE CONTROL,
- Bass ⓐ 100Hz ... ±10dB
- Treble ⓐ 10KHz ... ±10dB

PREAMP OUTPUT
- FM 50% MOD ... 700mV
- CDP INPUT SENSITIVITY ... 150mV
- LINE INPUT SENSITIVITY ... 350mV

● TUNER SECTION

FM USABLE SENSITIVITY, MONO ... 3μV(20.7dBf)
FM 50dB QUIETING SENS, STEREO ... 60mV(46.8dBf)
FM S/N RATIO, MONO ... 66dB
STEREO ... 64dB
FM STEREO SEPARATION ... 35dB
FM CHANNEL SELECTIVITY ... 65dB
FM CAPTURE RATIO ... 1.5dB
AM SENSITIVITY,
20dB S/N ... 30μV
AM STEREO SEPARATION ... 28dB
AM STEREO S/N RATIO ... 45dB
AM FREQUENCY RESPONSE ... 70Hz～4.5KHz

● CASSETTE SECTION

FREQUENCY RESPONSE,
- METAL ... 30Hz-17KHz
- NORMAL ... 30Hz-15KHz

WOW & FLUTTER(WRMS) ... 0.12%
S/N RATIO, DOLBY NR OFF ... 53dB

● GENERAL

OPERATING VOLTAGE ... DC14.4V(10.8V～15.6V allowable)
SPEAKER IMPEDANCE ... 4ohms
CHASSIS DIMENSIONS
W×H×D ... 180×50×140mm (6-5/8″×2″×5-9/64″inch)
NOSEPICE DIMENSIONS
W×H×D ... 105×43.5×37mm ($4\cdot\frac{1''}{8}\times 1\cdot\frac{23''}{32}\times 1\cdot\frac{15''}{32}$)

SHAFT SPAN ADJUSTMENTS ... 130mm(5-1/8″)
142mm(5-19/32″)
148mm(5-13/16″)
Remark:Factory-set.

NET WEIGHT ... 1.8kg(4.0lds)
FUSE,MAIN ... 5A,Normal blow
BACK UP ... 0.5A Normal brow

NOTE:Design and specifications subject to change without notice for improvements.

Contents

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Contents.....2
Electrical Adjustment Procedure.....3,4,5
Parts List & Top View of P.C Boards..... 6,7,8,9
Parts List & Exploded View of Cabinet & Chassis..... 10,11,12
Parts List & Deck Mechanism Ass'y.....13,14
Block Diagram..... 15
Point to Point Wiring Diagram.....16,17

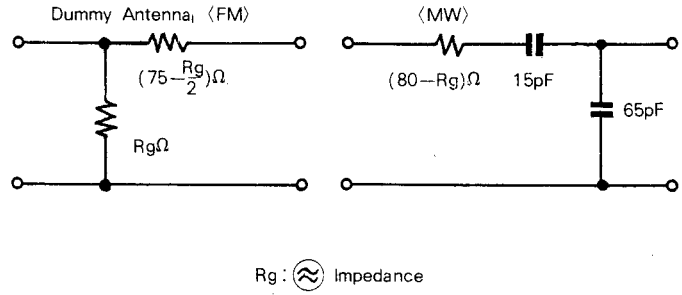
Electrical Adjustment Procedure

LUBRICATION

Lubricate one or two drops of machine oil rotating point or lubricate grease to sliding point.
Lubricate the respective parted below once every 1,000 hours or once a year under normal conditions of use.
Avoid oiling then excessively, or rotation may become irregular because of oil splashes.

Lubrication Point	Oil or Grease
Moter shaft bearing	Oil
Capstan shaft bearing	Oil
Pinch roller shaft bearing	Oil

ADJUSTMMENT TUNER



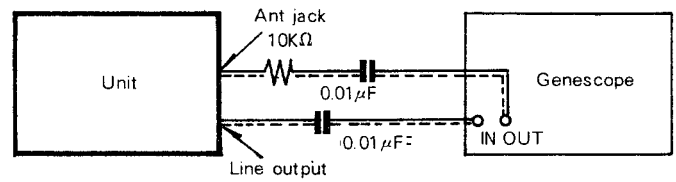
Rg : ≈ Impedance

FM IF adjustment

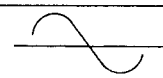
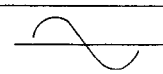
1. Setting

Band selector:FM
Local/DX selector:DX
Bass control(VR402L/R):Center
Treble control(VR403L/R):Center
Volume control(VR401L/R):MIN.
Balance control(VR404):Center
Fader Control(VR405L/R):Center

2. Connection



3. Adjustment

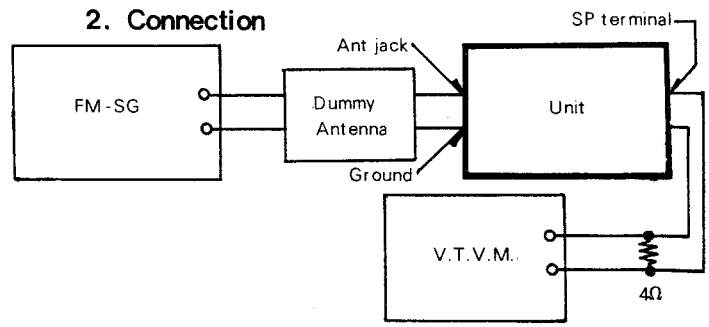
Gencopes	LCD display Freq-position	Adjust	Reading	Remarks
10.7MHz	Highest	L101 FM-IFT		Turn the IFT-A and FM-IFT fully counterclockwise
		L101 FM-IFT		Adjust the IFT-A and FM-IFT so that is like the S curve for symmetrical sinewave.
		L102		Adjust the IFT-B so that the straight line of the S curve can be achieved

FM RF adjustment

1. Setting

Band selector:FM
Local/DX selector:DX
Bass control(VR402L/R):Center
Treble control(VR403L/R):Center
Volume control(VR401L/R):APProximately center
Balance control(VR404):Center
Fader Control(VR405L/R):Center

2. Connection



3. Adjustment

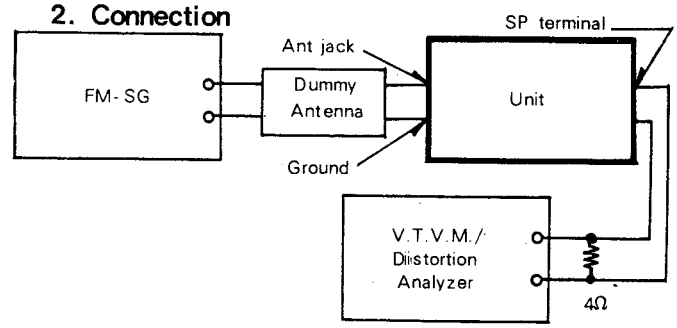
Item	Signal generator		LCD display Freq. Position	Adjust	Reading	Remarks
	Frequency	Modulation				
1 Covering	98.1MHz	1KHz, 100% 25.2dBf	98.1MHz	FM-IFT	Max	—

FM sensitivity adjustment

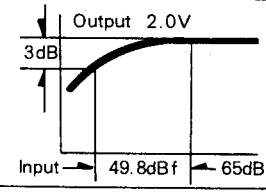
1. Setting

Band selector:FM
Local/DX selector:DX
Bass control(VR402L/R):Centrol
Treble control(VR403L/R):Center
Volume control(VR401L/R):Center
Balance control(VR404):Center
Fader control(VR405L/R):Center

2. Connection



3. Adjustment

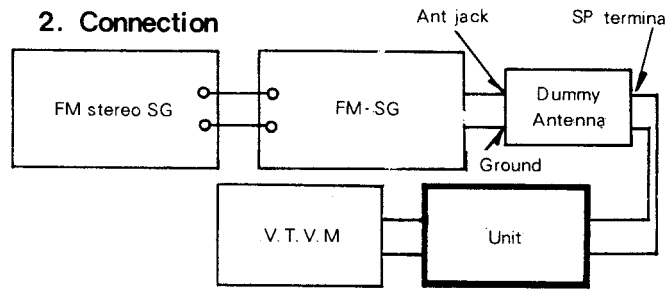
Item	Signal generator		LCD Display	Adjust	Reading	Remarks
	Frequency	modulation	Freq position			
1	98.1MHz	1KHz, 100% 65dBf	98.1MHz	VR401L/R	2.0V	
2		1KHz, 100% 25.2dBf		FM-IFT L101 L102	2.0V -3dB and to minimize distortion	

FM separation adjustment

1. Setting

Band selector:FM
Local/DX selector :DX
Bass control(VR402L/R):Center
Treble control(VR403L/R):Center
Volume control(VR404L/R):Approximately center
Balance control(VR404):Center
Fader Control(VR405L/R):Center

2. Connection



3. Adjustment

Item	Signal generator		LCD Display	Adjust	Reading	Remarks
	Frequency	Modulation	Freq position			
1	98.1 MHz, 65dBf	Pilot:19KHz 10% L+R:1KHz 90%	98.1MHz	VR401L/R	2.0V	
2		Pilot:19KHz 10% Lch :1KHz 45%		VR101	Rch:Min	

Tape deck

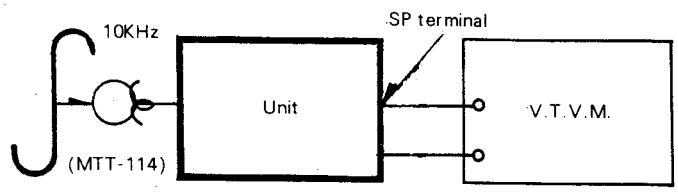
Clean the playback head, capstan shaft and Pinch roller.

Head azimuth adjusiment

1. Setting

Playback mode
Tape selector:Normal
Dolby NR switch:Off
Bass control(VR402L/R):Center
Treble control(VR403L/R):Center
Volume control(VR401L/R):Approximately center
Balance control(VR404):Center
Fader control(VR405L/R):Center

2. Connection



3. Adjustment

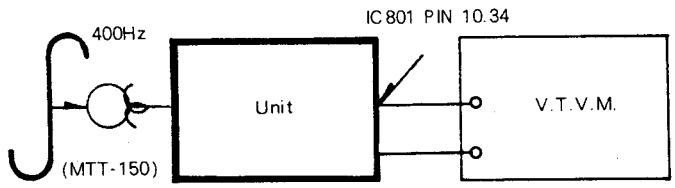
Playback a tape(MTT-114, 10KHz) and adjust the azimuth adjustment screw for maximum output

Playback level adjustment

1. Setting

Playback mode
Tape selector:Normal
Dolby NR switch:off
Bass control(VR402L/R):Center
Treble control(VR403L/R):Center
Volme control(VR401L/R):Approximately Center
Balance control(VR404L/R):Center
Fader control(VR405L/R):Center

2. Connection



3. Adjustment

Playback a test tape(MTT-150, 400Hz) and VR301L/R should be adjusted till the DOLBY output(IC 801 pin 10.34) is 490mV.

Parts List & Top View of P.C Boards

4003604400 MAIN BOARD

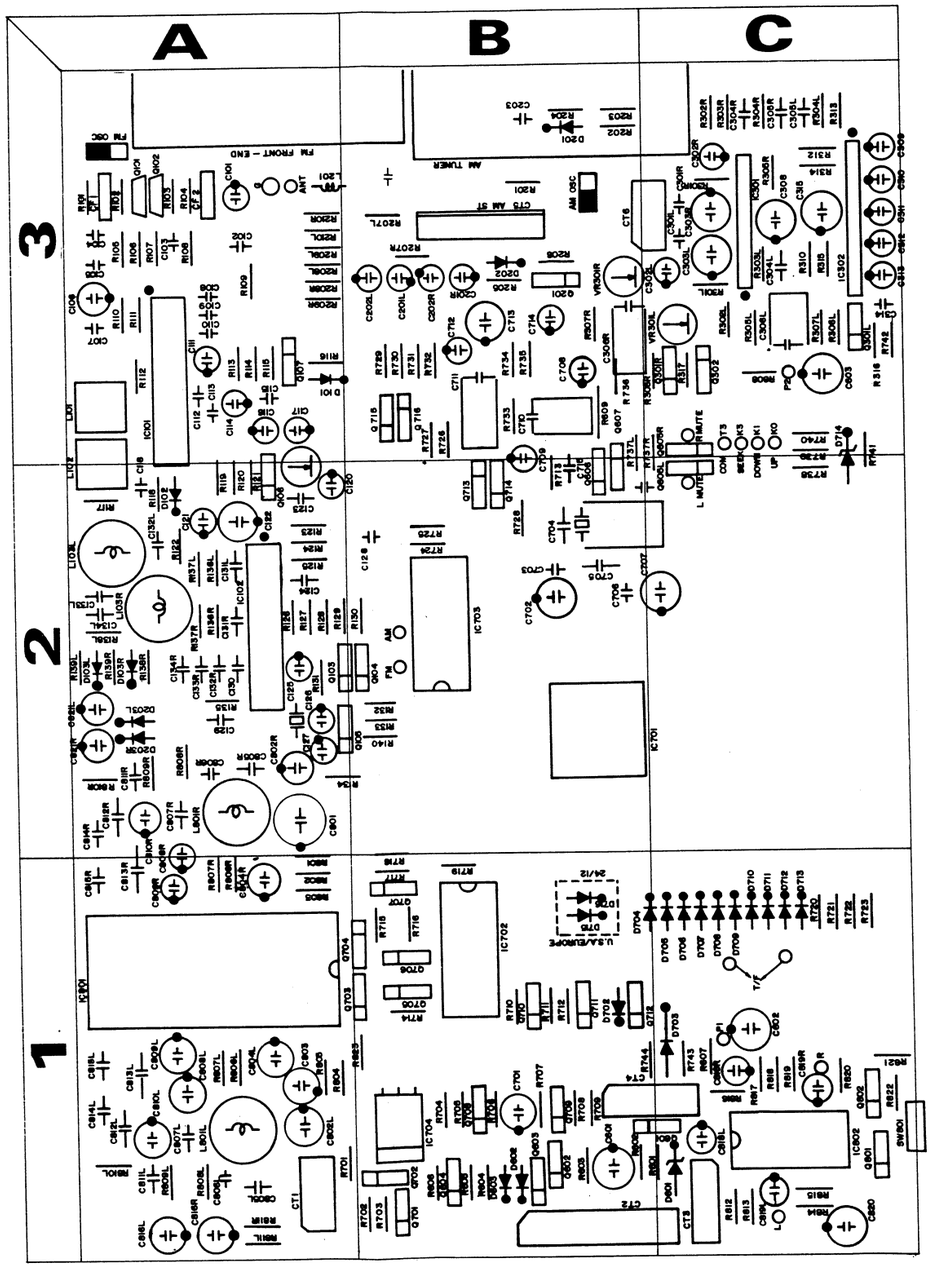
Ref.NO.	Parts NO.	Description	Position
• IC			
IC101	2168417101	LA1140	3A
IC102	2168417106	LA3430	2A
IC301	2168017105	LA3161	3C
IC302	2168022105	BA336	3C
IC701	2138007118	TC 9302F-009	2B
IC702	2138007120	TC 9173P	1B
IC703	2138007119	TC 9172P	2B
IC704	2168613100	μPC 78L05	1B
IC801	2168000108	CX 20187	1A
IC802	2138009101	MC 14066BCP	1C
• TUNER			
FM FRONT-END	3928101020	CEA3-704	3A
AM TUNER	3928001010	26E-3A	3B
• TRANSISTOR			
Q101, Q1021	2008406104	KTC 3195 O	3A
Q604, Q712	2008222100	2SA 937 R/S	1B
Q701, Q707	2008622100	2SC 2021 R/S	1B
Q708,			
Q103			2A
Q606			2B
Q713, Q714	2008610103	2SD 636R	2B
Q715, Q716			3B
Q711	2008622103	2SD 1055Q	1B
Q601	2008622900	2SD 947	1C
Q605R	2008610101	2SD 1330S	2C
Q605R			3C
Q702, Q705	2008222101	DTA 114Y	1B
Q706, Q710			
Q802.			1C
Q104.			2B
Q607			3B
Q302			3C
Q603	2008222103	DTA 143XF	1B
Q703, Q704	2008622104	DTA 114T	1A
Q602, Q709			1B
Q801			1C
Q106			2A
Q105			2B
Q107			3A
Q201			3B
Q301L/R			3C
• DIODE			
D602, D603,	2058322101	1N4148M	1B
D702, D704			
D703, D705			1C
D706, D707			
D708, D709			
D710, D711			
D712, D713			
D203L/R			2A
D102, D103L/R			
D101			3A
D201, D202			3B
D601	2058599122	Zener DZ-11BM	1C
D714			3C
• COIL			
L801L	2648601690	Inductor 22mH	1A
L801R			2A
L103L/R	2648601630	Inductor 33mH	2A
L201	2648601510	Inductor 4.7μH	3A
L102	2838501050	IFT 1	3A
L101	2838501060	IFT 2	3A
• FILTER			
CF1, CF2	3908011061	SFE 10.7MA8H-RD	3A
• SEMI FIXED RESISTOR			
VR101	3248322223	2.2KB HO621A	3A
VR301R	3248310323	10KB HO621A	3B
VR301L			3C
• RESONATOR			
	3938001009	CSB 456F 11	2A

Ref.No.	Parts No.	Description	Position
• X-TAL			
	3908101030	HC-18/u 7.2MHZ	2B
• CAPACITOR			
C120	3409110971	Elect SE 1μF 50V.	
C126	3409133971	Elect SE 3.3μF 50V	
C127	3409147871	Elect SE 0.47μF 50V	
C114, C709	3409210032	Elect SS 10μF 16V	
C702,	3409210112	Elect. SS 100μF 6.3V	
C802R/L	3409210121	Elect. SA 100μF 10V	
C309	3409210872	Elect. SS 0.1μF 50V	
C101, C125	3409210972	Elect. SS 1μF 50V	
C311, C701,			
C121,			
C201L/R	3409215872	Elect. SS 0.15μF 50V	
C202L/R			
C809L/R			
C801	3409222121	Elect. SA 220μF 10V	
C810L/R	3409222872	Elect. SS 0.22μF 50V	
C312, C714	3409222972	Elect. SS 2.2μF 50V	
C712	3409233972	Elect. SS 3.3μF 50V	
C122,	3409247032	Elect. SS 4.7μF 16V	
C303L/R			
C308, C315			
C707, C713			
C803, C820			
C601, C602			
C603.			
C808L/R	3409247872	Elect. SS 0.47μF 50V	
C106, C111	3409247962	Elect. SS 4.7μF 35V	
C116, C117			
C302L/R			
C313, C708			
C804L/R			
C816L/R			
C818L/R			
C819L/R			
C821L/R			
C310	3409268872	Elect. SS 0.68μF 50V	
C203	3509681233	Ceramic 680pF 50VJ	
C715	3509102233	Ceramic 0.001μF 50VK(200B)	
C102, C103	3509223534	Ceramic 0.022μF 50VZ(200B)	
C104, C105			
C107, C108			
C109, C110			
C113, C115			
C128, C314			
C703, C706			
C123	3509271233	Ceramic 270pF 50KV(200B)	
C112, C118	3509330130	Ceramic 33pF 50VJ	
C806L/R	3509561233	Ceramic 560pF 50VK(200B)	
C704, C705	3529330210	Ceramic 33pF CH 50VJ	
C134L/R	3609102122	Mylar. M 0.001μF 100VJ	
C301L/R			
C130,	3609103122	Mylar. M 0.01μF 100VJ	
C815L/R			
C124,	3609153122	Mylar. M 0.015μF 100VJ	
C811L/R			
C306L/R	3609183122	Mylar. M 0.018μF 100VJ	
C132L/R	3609222122	Mylar. M 0.0022μF 100VJ	
C133L/R			
C131L/R	3609223122	Mylar. M 0.022μF 100VJ	
C304L/R			
C305L/R			
C710, C711			
C129,	3609332122	Mylar. M 0.0033μF 100VJ	
C805L/R			
C807L/R	3609472122	Mylar. M 0.0047μF 100VJ	
C812L/R	3609473122	Mylar. M 0.047μF 100VJ	
C814L/R	3609682122	Mylar. M 0.0068μF 100VJ	
C813L/R	3609683122	Mylar. M 0.068μF 100VJ	
• RESISTOR			
R122	3009563973	Carbon 56K 1/8WJ	
R810L	3009681973	Carbon 680 1/8WJ	
R809L	3009682973	Carbon 6.8K 1/8WJ	
R601	3069100970	Carbon 10 1/8WJ	
R101, R310	3069101970	Carbon 100 1/8WJ	
R315, R701			
R801, R607			
R608			

Ref.No.	Parts No.	Desciption	Position
R134,	3069102970	Cardon 1K 1/5WJ	
R210L/R			
R703, R727			
R730, R735			
R744			
R129, R130	3069103970	Cardon 10K 1/5WJ	
R131, R133			
R206,			
R207L/R			
R208L/R			
R209L/R			
R702, R705			
R706, R707			
R715, R716			
R717, R728			
R729, R731			
R734, R812			
R817, R821			
R822, R604			
R609, R712			
R120, R135	3069104970	Carbon 100K 1/5WJ	
R204,			
R303L/R			
R306/ L/R			
R720, R721			
R722, R723			
R736, R805			
R813, R814			
R815, R818			
R819, R820			
R713, R725	3069105970	Carbon 1M 1/5WJ	
R726			
R132	3069123970	Carbon 12K 1/5WJ	
R116, R118	3069153970	Carbon 15K 1/5WJ	
R816	3069221970	Carbon 220 1/5WJ	
R123	3069222970	Carbon 2.2K 1/5WJ	
R114, R124	3069223970	Carbon 22K 1/5WJ	
R127, R802			
R803, R804			
R301L/R	3069241970	Carbon 240 1/5WJ	
R733	3069242970	Carbon 2.4K 1/5WJ	
R117	3069272970	Carbon 2.7K 1/5WJ	
R126	3069273970	Carbon 27K 1/5WJ	
R109, R125	3069330970	Carbon 33 1/5WJ	
R201			
R102, R104	3069331970	Carbon 330 1/5WJ	
R111, R711			
R602,			
R103,	3069332970	Carbon 3.3K 1/5WJ	
R135L/R			
R137L/R			
R305L/R			
R719, R732			
R806L/R			
R808L/R			
R138L/R	3069333970	Carbon 33K 1/5WJ	
R312, R314	3069334970	Carbon 330K 1/5WJ	
R307L/R	3069392970	Carbon 3.9K 1/5WJ	
R105 R113	3069470970	Carbon 47 1/5WJ	
R106, R107	3069471970	Carbon 470 1/5WJ	
R108, R724			
R740, R741			
R807L/R			
R202, R313	3069472970	Carbon 4.7K 1/5WJ	
R317,			
R737L/R			
R743			
R139L/R	3069473970	Carbon 47K 1/5WJ	
R203, R704			
R708, R709			
R710, R714			
R718, R738			
R742			
R811L/R			
R823, R603			
R605, R606			
R205	3069474970	Carbon 470K 1/5WJ	
R110, R112	3069562970	Carbon 5.6K 1/5WJ	
R128			
R115	3069563970	Carbon 56K 1/5WJ	
R810R	3069681970	Carbon 680 1/5WJ	

Ref.No.	Parts No.	Description	Position
R809R	3069682970	Carbon 6.8K 1/5WJ	
R119, R316	3069683970	Carbon 68K 1/5WJ	
R739,			
R304L/R			
R302L/R	3069822970	Carbon 8.2K 1/5WJ	
R121, R140	3069823970	Carbon 82K 1/5WJ	

MAIN BOARD 4003604400



Parts List & Top View of P.C Boards

POWER BOARD 4003604300

Ref.No.	Parts No.	Description	Position
• IC			
IC501L/R	2168000101	TDA2005	
• TRANSISTOR			
Q501L/R	2008622100	2SC2021 R/S	
Q502L/R			
• DIOE			
D501	2058106101	IN4003	
D502	2058599107	Zener. DZ-9. IBM	
D504	2058322101	IN4148M	
• CAPACITOR			
C502L/R	3409210032	Elect. SS 10μF 16V	
C503L/R	3409210121	Elect. SA 100μF 10V	
C504L/R			
C505L/R			
C506L/R			
C501L/R	3409210233	Elect. SA1000μF 16V	
C508L/R	3409210972	Elect. SS 1μF 50V	
C512L/R			
C513L/R	3409215223	Elect. SA 1500μF 10V	
C516, C517	3409247021	Elect. SA 47μF 10V	
C511L/R	3409247962	Elect. SS 4.7μF 35V	
C518L/R	3509104534	Ceramic. 0.1Fμ 50VZ(203F)	
C520L/R			
C519L/R	3509104534	Ceramic. 0.1μF 50VZ(203F)	
C507L/R	3509470130	Ceramic. 47pF 50VJ	
C514L/R	3609104122	Mylar M 0.1μF 100VJ	
C515L/R			
• RESISTOR			
R511, R514	3009101973	Carbon 100 1/8WJ	
R521L/R			
R503L/R	3009104973	Carbon 100K 1/8WJ	
R504L/R			
R523L/R	3009122973	Carbon 1.2K 1/8WJ	
R524L/R			
R507L/R	3009124973	Carbon 120K 1/8WJ	
R518L/R			
R506L/R	3009184973	Carbon 180K 1/8WJ	
R510L/R	3009222973	Carbon 2.2K 1/8WJ	
R517L/R			
R509L/R	3009273973	Carbon 27K 1/8WJ	
R508L/R	3009274973	Carbon 270K 1/8WJ	
R526L/R	3009330973	Carbon 33 1/8WJ	
R522L/R	3009333973	Carbon 33K 1/8WJ	
R525L/R	3009470973	Carbon 47 1/8WJ	
R501L/R	3009473973	Carbon 47K 1/8WJ	
R502L/R			
R520L/R			
R515L/R	3009109272	Carbon 1 1/4WJ	
R516L/R			
R519L/R	3009103973	Carbon 10K 1/8WJ	
R513	3009561973	Carbon 560 1/8WJ	
R505L/R	3009821973	Carbon 820 1/8WJ	

VOLUME BOARD 4005604100

Ref.No.	Parts No.	Descirption	Position
• TRANSISTOR			
Q401L/R	2008622100	2SC 2021R/S	
• CAPACITOR			
C403L/R	3409110971	Elect. SE 1μF 50V	
C401L/R	3409210972	Elect. SS 1μF 50V	
C407L/R	3409233872	Elect. SS 0.33μF 50V	
C402L/R	3509181130	Ceramic 180pF 50VJ	
C405L/R	3609393122	Mylar M 0.39μF 100VJ	
C406L/R	3609473122	Mylar M 0.047μF 100VJ	
C404L/R	3609562122	Mylar M 0.0056μF 100VJ	
• RESISTOR			
R405L/R	3009102973	Carbon 1K 1/8WJ	
R407L/R	3009152973	Carbon 1.5K 1/8WJ	
R404L/R	3009181973	Carbon 180 1/8WJ	
R402L/R	3009222973	Carbon 2.2K 1/8WJ	
R406L/R	3009682973	Carbon 6.8K 1/8WJ	
R408L/R	3009821973	Carbon 820 1/8WJ	
R409L/R			
R403L/R	3009104973	Carbon 100K 1/8WJ	
R401L/R	3009474973	Carbon 470K 1/8WJ	

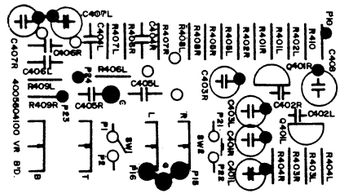
TUNING BOARD 4003604310

Ref.No.	Parts No.	Description	Position
• TRANSISTOR			
Q402L/R	2008622100	2SC2021R/S	
• CAPACITOR			
C409L/R	3409109722	Elect. SS 1μF 50V	
C411L/R			
C410L/R	3509460130	Cermic. 47pF 50VJ	
• RESISTOR			
R415L/R	3009102973	Carbon 1K 1/8WJ	
R412L/R	3009104973	Carbon 100K 1/8WJ	
R413L/R	3009181973	Carbon 180 1/8WJ	
R414L/R	3009222973	Carbon 2.2K 1/8WJ	
R416L/R	3009472973	Carbon 4.7K 1/8WJ	
R417L/R			
R411L/R	3009474973	Carbon 470K 1/8WJ	

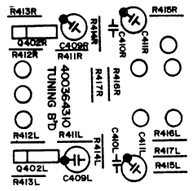
AM ST BOARD 4003602900

Ref No.	Part No.	Description	Position
• IC			
IC202	2168009100	MC 13020p	
• RESONATOR			
X201	3938001003	CSA 3.6MT7	
• CAPACITOR			
C233, C247	3409110031	Elect. SE 10μF 16V	
C238	3409110971	Elect. SE 1μF 50V	
C246	3409122021	Elect. SE 22μF 10V	
C242	3409122911	Elect. SE 2.2μF 50V	
C248, C249	3409133871	Elect. SE 0.33μF 50V	
C245	3409147931	Elect. SE 4.7μF 16V	
C235	3409222121	Elect. SA 220μF 10V	
C244	3409847020	Elect. NP 47μF 10V	
C234	3509102233	Ceramic 0.001μF 50VF(200B)	
C230, C232	3509103534	CEramic 0.01μF 50VK(200F)	
C240			
C236, C237	3509332530	Ceramic 0.0033μF 50V	
C239, C243			
C231	3509473534	Ceramic 0.047μF 50VZ(200F)	
C241	3529500212	Ceramic NPO CSC 500X7	
• RESISTOR			
R248R/L	3069102970	Carbon 1K 1/8WJ	
R247	3069103970	Carbon 10K 1/8WJ	
R237	3069104970	Carbon 100K 1/8WJ	
R246	3069122970	Carbon 1.2K 1/8WJ	
R231	3069124970	Carbon 120K 1/8WJ	
R244, R245	3069152970	Carbon 1.5K 1/8WJ	
R233, R234	3069182970	Carbon 1.8K 1/8WJ	
R239	3069221970	Carbon 220 1/8WJ	
R238	3069222970	Carbon 2.2K 1/8WJ	
R242	3069272970	Carbon 2.7K 1/8WJ	
R236	3069330970	Carbon 33 1/8WJ	
R235	3069331970	Carbon 330 1/8WJ	
R232	3069333970	Carbon 33K 1/8WJ	
R243	3069334970	Carbon 330K 1/8WJ	
R240	3069471970	C bon 400 1/8WJ	
R241	3069563970	Carbon 56K 1/8WJ	

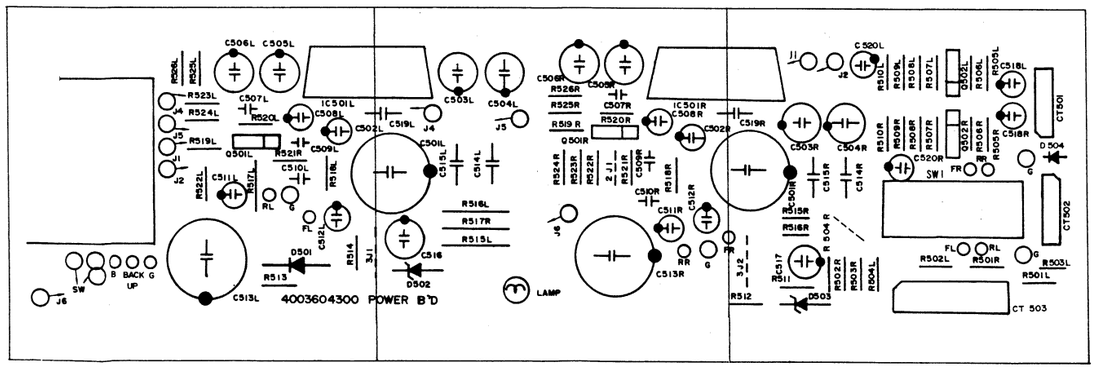
VOLUME BOARD 4005604100



TUNING BOARD 4003604310

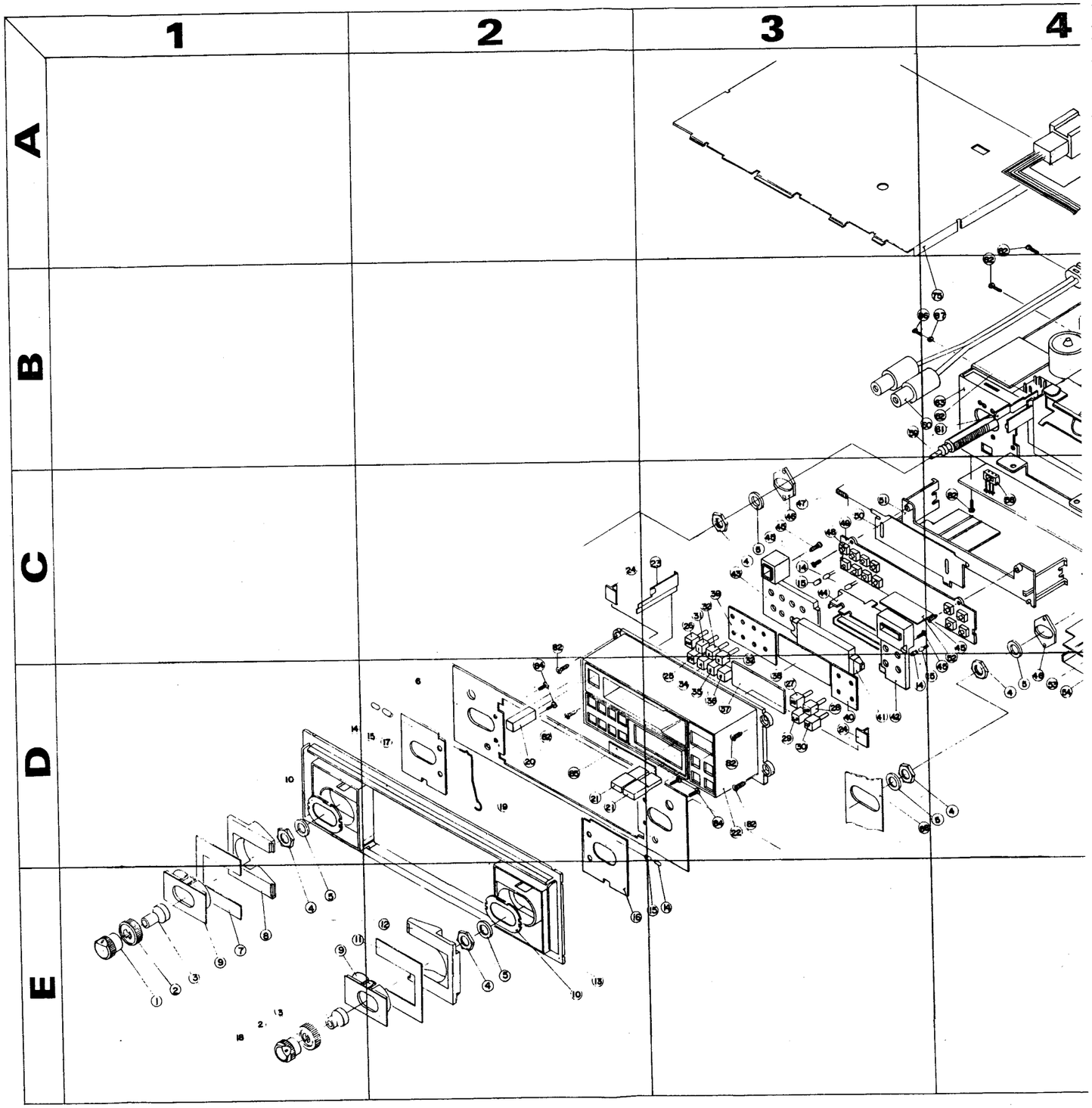


POWER BOARD 4003604300



Parts List & Exploded View of Cabinet & Chassis

NO.	PARTS NO.	DESCRIPTION	POSITION	Q'TY
1	048545025112	KNOB CONTROL INNER	1E	1
2	048545010711	KNOB CONTROL OUTER	1E	2
3	6705002510	COVER SHAFT	1E	2
4		NUT HEX 3/8" UNEF	1E	6
5		WASHER PLAIN	1E	6
6	6163000110	PLATE TRIM	2D	1
7	048535007311	ILLUMINATION P.C(L)	1E	1
8	048555011111	REFLECTOR TRIM(L)	1E	1
9	048525006311	DECORATION TRIM	1E	2
10	6165118810	PLATE G.N.D SHAFT	1D	2
11	048535007211	ILLUMINATION P.C(R)	1E	1
12	048555011011	REFLECTOR TRIM(R)	2E	1
13	8502001610	TRIM PANEL	2E	1
14	8728000170	CAP COLOR(POIG-20)	1D	6
15	2528201111	LAMP 14V/40mg	2D	6
16	4005604300	P.C B'D TRIM PANEL(R)	2E	1
17	4005604400	P.C B'D TRIM PANEL(L)	2D	1
18	048545025113	KNOB CONTROL INNER	1E	1
19	6555004510	SPRING G.N.D(L)	2D	1
20	8545020210	BUTTON-PUSH(EJECT)	2D	1
21	048543004811	BUTTON-PROG(FF/REW)	2D	2
22	048512001411	NOSE PIECE	3D	1
23	6165118910	PLATE ACC CONNECT	3C	1
24	6515008210	DOOR STOPPER	2C	2
25	048545020531	BUTTON-FUNCTION(PS)	3D	1
26	048545020541	BUTTON-FUNCTION(AM)	3C	1
27	048545020511	BUTTON-FUNCTION(ME)	3D	1
28	048545020571	BUTTON-FUNCTION(MO)	3D	1
29	048545020521	BUTTON-FUNCTION(LO)	3D	1
30	048545020561	BUTTON-FUNCTION(CD)	3D	1
31	048545022811	BUTTON-PRESET(1)	3C	1
32	048545022821	BUTTON-PRESET(2)	3C	1
33	048545022831	BUTTON-PRESET(3)	3D	1
34	048545022841	BUTTON-PRESET(4)	3D	1
35	048545022851	BUTTON-PRESET(5)	3D	1
36	048545022861	BUTTON-PRESET(6)	3D	1
37	2338009904	LCD	3D	1
38	8538000210	FILTER LCD	3D	1
39	6705004810	SPONGE-FUNCTION	3C	1
40	6705005610	SPONGE-PRESET "B"	3D	1
41	8555011210	REFLECTOR LCD	3D	1
42	048553003411	REFLECTOR GUIDE "A"	3D	1
43	048553004311	REFLECTOR GUIDE "B"	3C	1
44	8573004010	COVER LCD	3C	1
45	8119120051	SCREW IPT2×5	3C	8
46	6505051310	B.K.T FIXING	3C	2
47	6555602810	DOOR SPRING	3C	1
48	4658001110	S/W TACT EVQ-QSR-05K	3C	12
49	4005604200	P.C B'D S/W TACT	3C	1
50	048535007511	DOOR CASSETTE	3C	1
51	8573004110	FRAME P.C.B	3C	1
52	4118300210	INTER CONNECTOR	4D	1
53	4835007410	INSULATION	4D	1
54	6123004410	COVER BOTTOM	4D	1
55	8545020010	SUPPORTER DECK	5D	1
56	4323000110	CORD RCA(4P)	5D	1
57	4003604400	P.C B'D MAIN	4C	1
58	4618004510	SW SLIDE	4C	1
59	3208044910	POTENTION METER VR/ON/OFF	3B	1
60	4323000210	CORD RCA(2P)	4B	1
61	6505058310	B.K.T EJECT	4B	1
62	4005604100	P.C. B'D VR	4B	1
63	6122611610	CHASSIS BODY	4B	1
64	400364310	P.C B'D TUNING	4C	1
65	3208044810	POTENTION METER TUNING	5B	1
66	4003602900	P.C B'D AM S/T	5B	1
67	4835005810	INSULATION COVER "B"	5B	1
68	6715001410	CUSHION SPONGE	5B	1/3
69	6505062110	IC FIXATION B/K	5B	1
70	6165118010	PLATE REFLECTOR	4B	1
71	5708005110	DECK MECHAINSM TN727NKHT-280	4	1
72	6505064910	B.K.T DECK	4B	1
73	6165113310	B.K.T FEED	4B	1
74	4003604300	P.C B'D POWER	4B	1
75	6123004310	COVER TOP	4B	1
76	6063101010	CAP CHOKE	5A	1
77	7503006310	HEAT SINK POWER	5B	1
78	8019130081	SCREW PM3×8Y	5B	2
79	8019130151	SCREW PM 3×15Y	5D	1
80	4353001410	ANT RECEPTACLE	5C	1
81	8119430061	SCREW SAM 3×6	5B	6
82	8119430051	SCREW SAM 3×5	5C	4
83	8009120071	SCREW #IPT 2×7	2D	4
84	8119430051	SCREW SAM 3×5	4C	4
85	048535004412	WINDOW LCD	2D	1
86	8019126041	SCREW PM 2.6×4	4B	1
87	8319126011	WASHER SPRING φ2.6	4B	1
88	8635002910	PLATE SUB	2C	2



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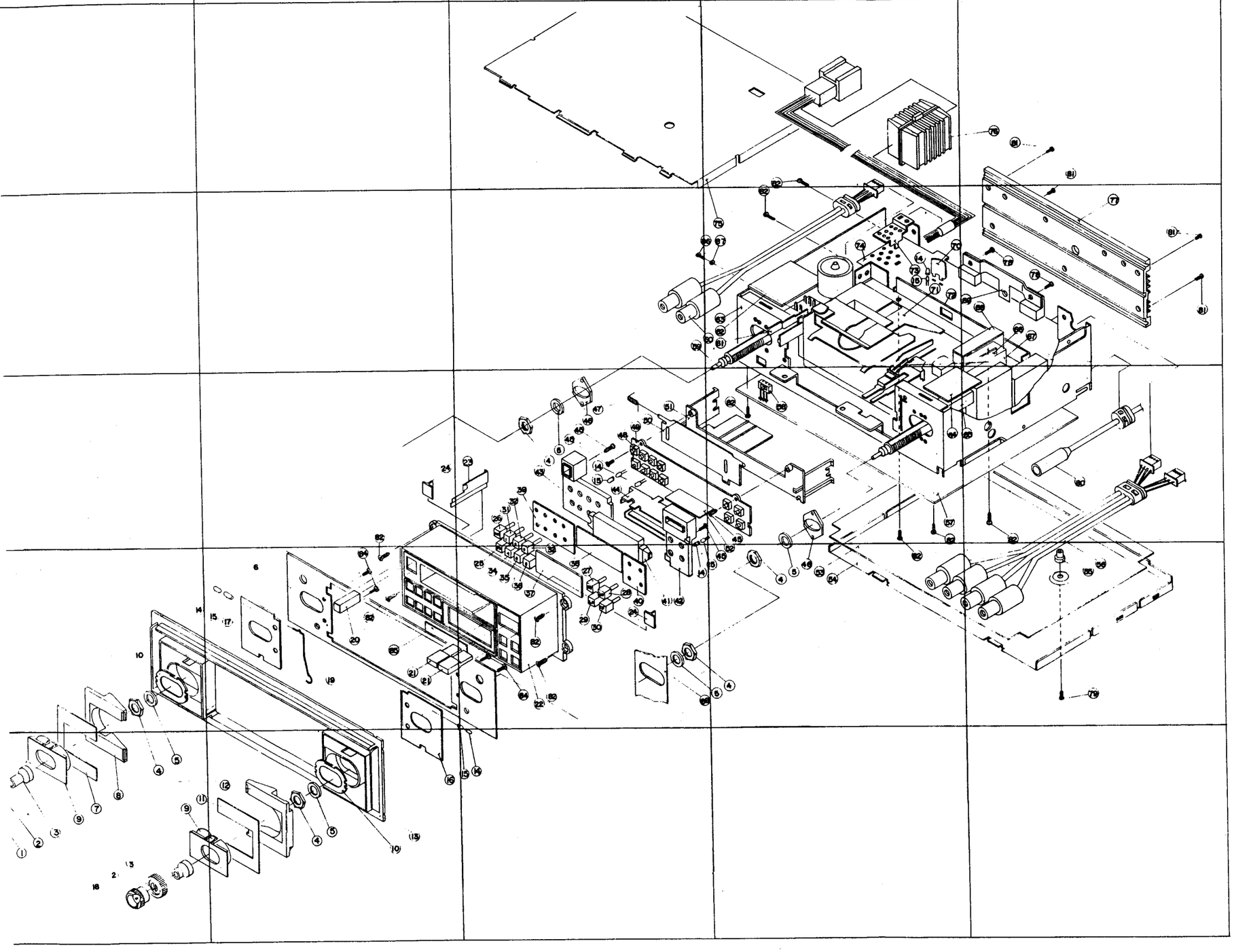
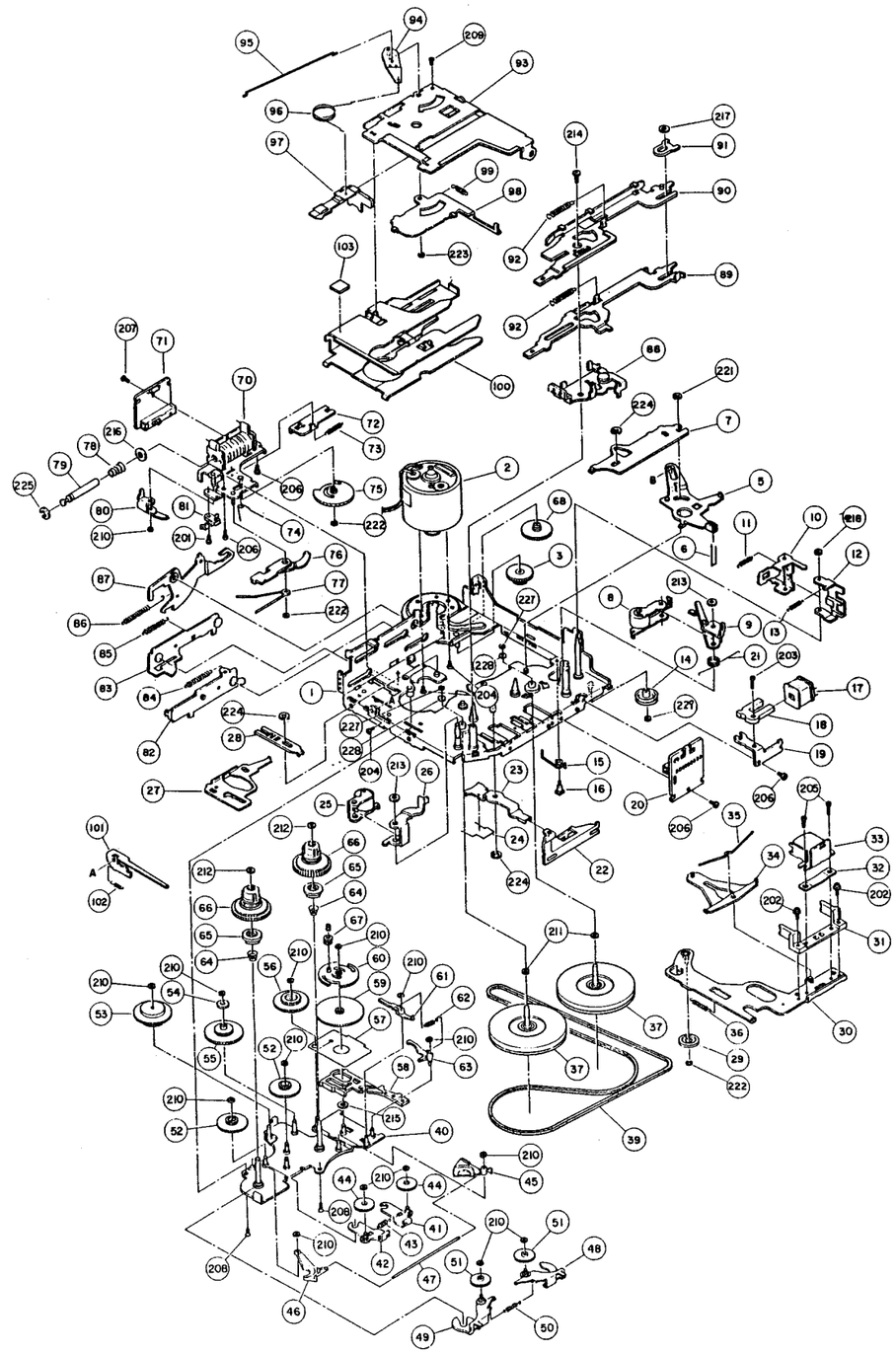
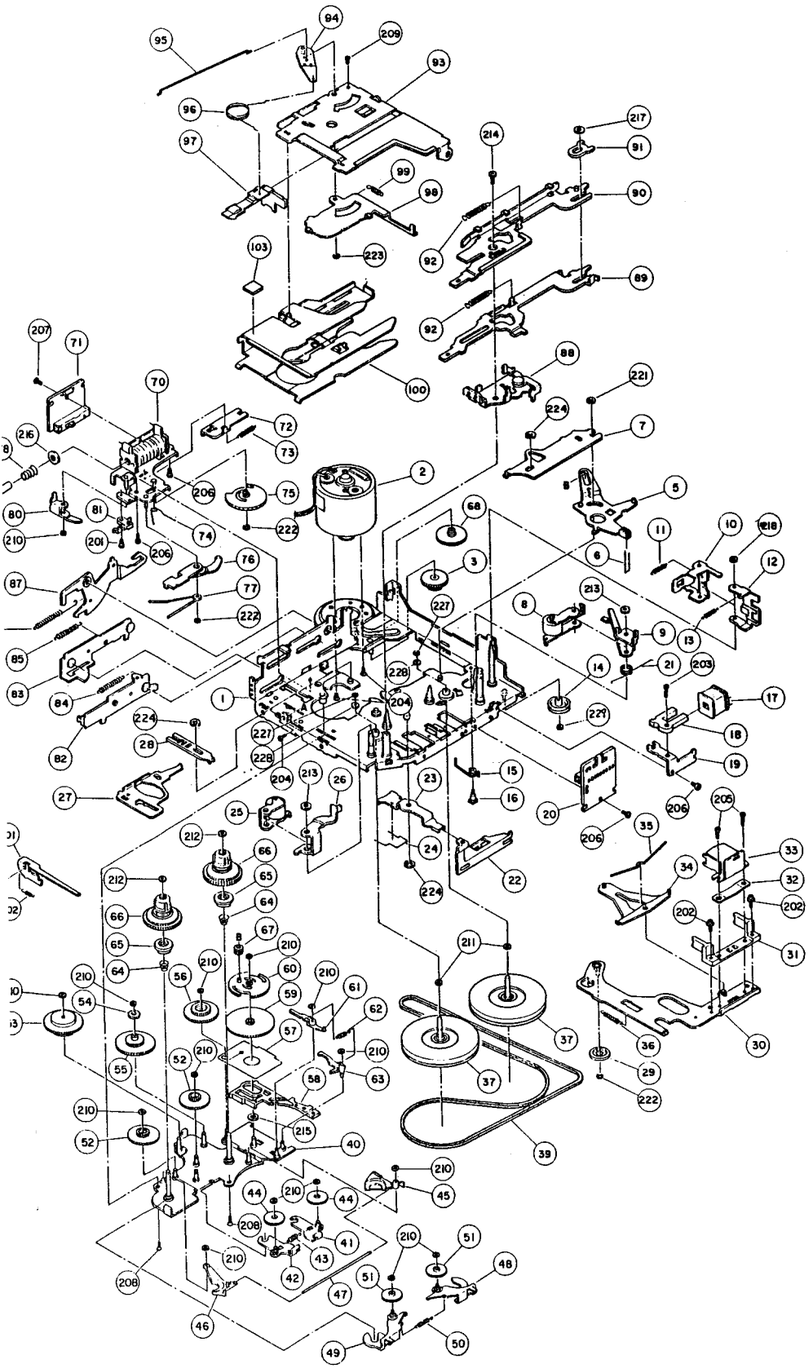


Parts List According to Deck Mechanism Ass'y

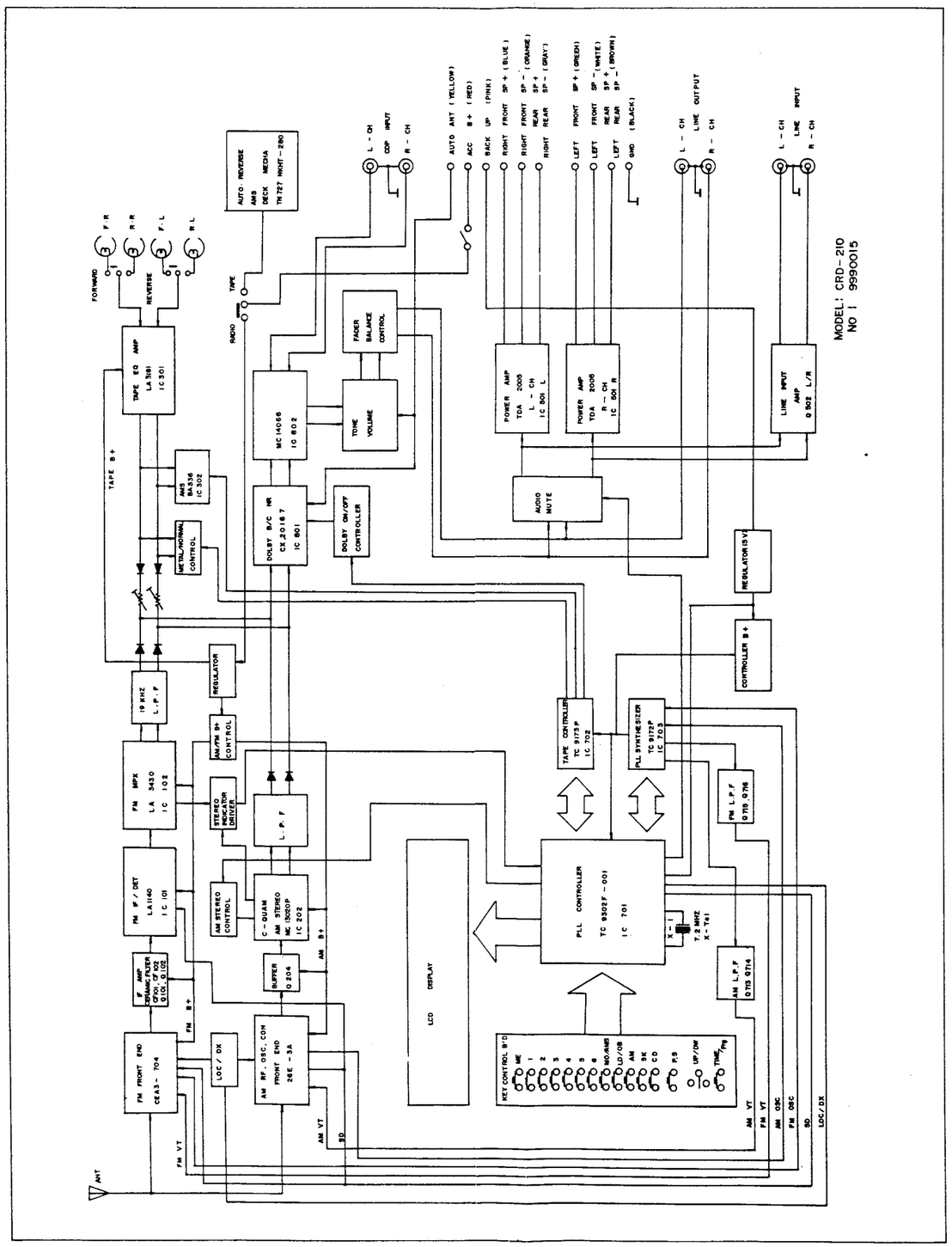
NO.	PARTS NO.	DESCRIPTION	Q'TY
1	184001507	CHASSIS ASS'Y	1
2	184001309	MOTOR ASS'Y	1
3	18400156	MAIN GEAR	1
5	184001503	CHANGE PLATE ASS'Y	1
6	18400127	HEAD SWITCH SPRING	1
7	18400315	MAIN PLATE	1
8	184004301	PINCH ROLLER ARM(F) ASS'Y	1
9	18400407	TRIGGER & STOP ARM ACTUATOR	1
10	18400505	F.R(FF.REW) LOCK PLATE	1
11	18400506	F.R(FF.REW) LOCK SPRING	1
12	18400508	F.R(FF.REW) RELEASE PLATE	1
13	18400509	F.R(FF.REW) RELEASE PLATE SPRING	1
14	18400121	CONTROL SPRING	1
15	18400129	COLLAR SCREW	1
16	18400131	T.P.S COIL ASS'Y	1
17	18400606	CORE	1
18	18400603	PLUNGER BRACKET	1
19	18400607	PRINT BASE ASS'Y(H)	1
20	184006301	TRIGGER & STOP ARM ACTUATOR SPRING	1
21	18400408	F.R(FF.REW) SLIDE PLATE	1
22	18400501	F.R(FF.REW) ACTUATOR	1
23	18400504	F.R(FF.REW) ACTUATOR SPRING	1
24	18400502	PINCH ROLLER ARM(R) ASS'Y	1
25	184004302	PULL PLATE	1
26	18400411N	T.G(TACK UP GEAR) ACTUATOR	1
27	18400301	T.G(TAKE UP GEAR)PUSH PLATE	1
28	18400313	HEAD PANEL ROLLER(K)	1
29	18400318	HEAD PANEL (K) ASS'Y	1
30	184003504	TAPE GUIDE	1
31	18400308	HEAD SPRING PLATE	1
32	18400310	HEAD	1
33		HEAD	1
34	18400311	PINCH ROLLER ACTUATOR	1
35	17300323	PINCH ROLLER SPRING	1
36	18400317	HEAD PANEL SPRING(K)	1
37	18400420	FLYWHEEL CAPSTAN	2
39	18400417A	MAIN BELT	1
40	184002501	MAIN GEAR PLATE ASS'Y	1
41	184002502	FF GEAR PLATE ASS'Y	1
42	184002503	REW GEAR PLATE ASS'Y	1
43	18400275	F.R(FF.REW) GEAR PLATE SPRING	1
44	18400212	FF GEAR	2
45	18400238	E.D (END DETECTOR) PLATE(F)	1
46	18400239	E.D(END DETECTOR) PLATE(R)	1
47	18400240	END SENSER PUSH BAR	1
48	184002506	TAKE UP GEAR PLATE(F) ASS'Y	1
49	184002507	TAKE UP GEAR PLATE(R) ASS'Y	1
50	18400247	TACK UP GEAR PLATE SPRING	1
51	18400244	T.(TAKE UP) GEAR	2
52	18400237	F.T.(FF & TAKE UP) GEAR	2
53	184002305	F.R(FF.REW) CLUTCH ASS'Y	1
54	18400228	DEVICE GEAR (UPPER)	1
55	18400229	DEVICE GEAR(LOWER)	1
56	18400227	DEVICE & TRIGGER/STOP ARM GEAR	1
57	18400271	SLIP SHEET	1
58	18400261N	EOD SENSING PLATE END	1
59	18400272	TRIGGER & STOP ARM ACTUATOR GEAR	1
60	18400220A	TURN OVER GEAR	1
61	18400224	STOP ARM	1
62	18400225	TRIGGER & STOP ARM SPRING	1
63	18400223	TRIGGER ARM	1
64	18400248	END DETECTOR SPRING	2
65	18400250	END DETECTOR PIECE	2
66	184002308	TAKE UP REEL SUB-ASS'Y	2
67	18400126	TURN OVER GEAR COLLAR	1
68	18400155	DRIVE GEAR	1
70	184007501	KEY-OFF BRACKET ASS'Y	1
71	184007302	PRINT BASE (K) ASS'Y	1
72	18400709	SWICTH ACTUATOR SWITCH	1
73	18400710	POWER SWITCH SPRING	1
74	18400714	KEY-OFF GEAR SPRING	1
75	18400715	KEY-OFF CAM GEAR	1
76	184007503	KEY-OFF ⋆ PLATE ASS'Y	1
77	18400728	KEY-OFF SPRING	1
78	18400720	PLUNGER SPRING	1
79	184007303	KEY-OFF PLUNGER SPRING	1
80	18400729	TRIGGER ARM PLATE	1
81	640101124	MUTING SWITCH(MSW-1547N)	1
82	184008502	PUSH LEVER ASS'Y	1
83	184008505	CASSETTE CASE & HEAD PANEL PUSH PLATE ASS'Y	1

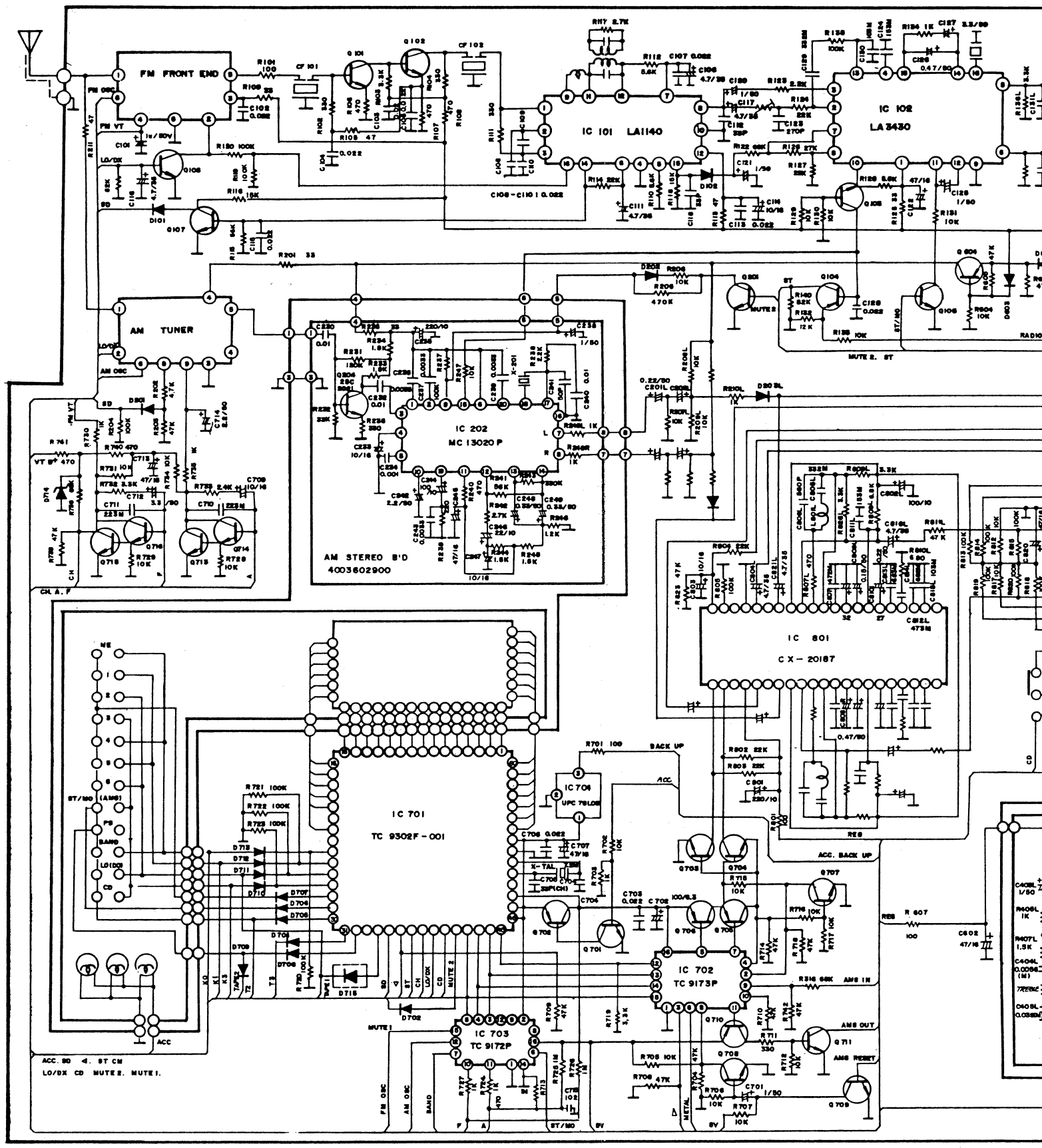
NO.	PARTS NO.	DESCRIPTION	Q'TY
84	18400807	PUSH LEVER.SPRING	1
85	18400803	CASSETTE CASE & HEAD PANEL SPRING	1
86	18400810	LIFT UP LEVER SPRING	1
87	18400808	LIFT UP LEVER	1
88	184005507	F.R(FF.REW) BRACKET ASS'Y	1
89	18400534N	REW LEVER	1
90	18400533N	FF LEVER	1
91	18400520	PROGRAM CHANGE PLATE	1
92	18400518	F.R(FF.REW) LFVER SPRING	2
93	18400812	CASE LIFFTER	1
94	184008503	P.E.(PACK EJECT) PLATE ASS'Y	1
95	18400823	P.E.(PACK EJFCT) SPRING	1
96	18400814	TURN OVER SPRING	1
97	18400813	PACK SLIDER	1
98	18400818	C.D.(CASSETTE DETECTING) PLAGE	1
99	18400820	C.D.(CASSETTE DETECTING) SPRING	1
100	18400822	CASSETTE CASE	1
101	18400325	TIMING PLATE	1
102	17100216	SPRING	1
103	18400821	CUSHION RUBBER	1
201	98620000	CAMERA SCREW 1.7×3.5	
202	90780000	TAMS SCREW 2.0×5	
203	91820000	TAPPING SCREW 2.0×6	
204	95480000	CAMERA SCREW 2.0×2	
205	97220000	SCREW( ) SPECIAL 2.0×4	
206	98000000	CAMERA SCREW(TAPPING) S 2.0×3	
207	98290000	CAMERA SCREW 2.0×2.5	
208	98090000	CAMERA SCREW(FLAT) 2.0×3.5	
209	98010000	CAMERA SCREW(TAPPING)S 2.0×4	
210	94210000	POLY SLIDER WASHER(CUT) 1.2×3.0×0.25	
211	94290000	POLYSLIDER WASHER 2.1×5.0×0.13	
212	97930000	POLYSLIDER WASHER(CUT)1.6×3.4×0.3	
213	97440000	POLYSLIDER WASHER(CUT)2.1×5.0×0.4	
214	99991801	CAMERA SCREW(TAMS)2.6×4.5	
215	97940000	LUMILAR WASHER 3.1×4.8×0.1	
216	97960000	LUMILAR WASHER 3.6×8.0×0.2	
217	98720000	POLYSLIDER WASHER(CUT)3.0×6.0	
218	97430000	POLYSLIDER WASHER(CUT)1.6×3.8×0.3	
221	94970000	E RING(B)SPECIAL 1.5	
222	94990000	E RING 1.2	
223	95000000	E RING 1.5	
224	95020000	E RING 2.0	
225	95040000	E RING 2.5	
227	90990000	LUMILAR WASHER(CUT)1.55×3.5×0.5	
228	98830000	POLYSLIDER WASHER 2.0×3.5×0.2	
229	99270000	POLYSLIDER WASHER 0.85×2.8×0.25	

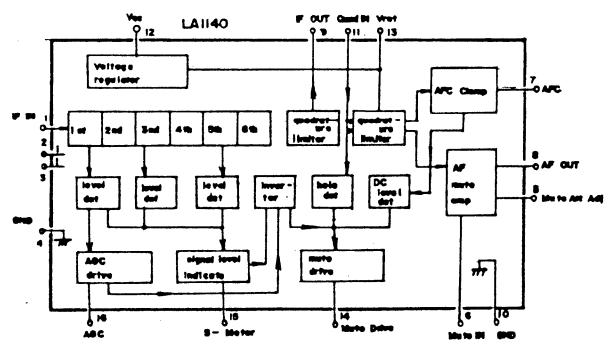


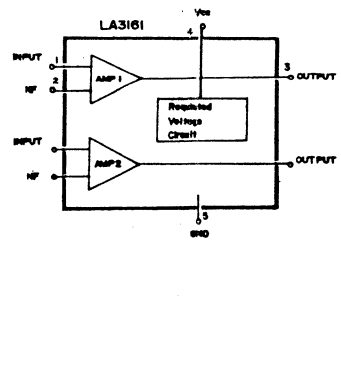


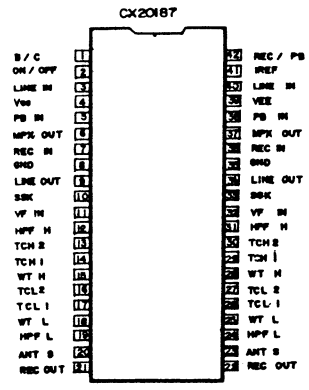
Block Diagram




FM FRONT END
AM TUNER
IC 101 LA1140
IC 102 LA3430
IC 202 MC 13020 P
AM STEREO B'D 4003602900
IC 701 TC 9302F-001
IC 702 TC 9173P
IC 703 TC 9172P
IC 704 UPC 78L08
IC 801 CX-20187
ACC. BACK UP
MUTE2. ST
AMS IN
AMS OUT
AMS RESET
BACK UP
ACC
REG
RADIO

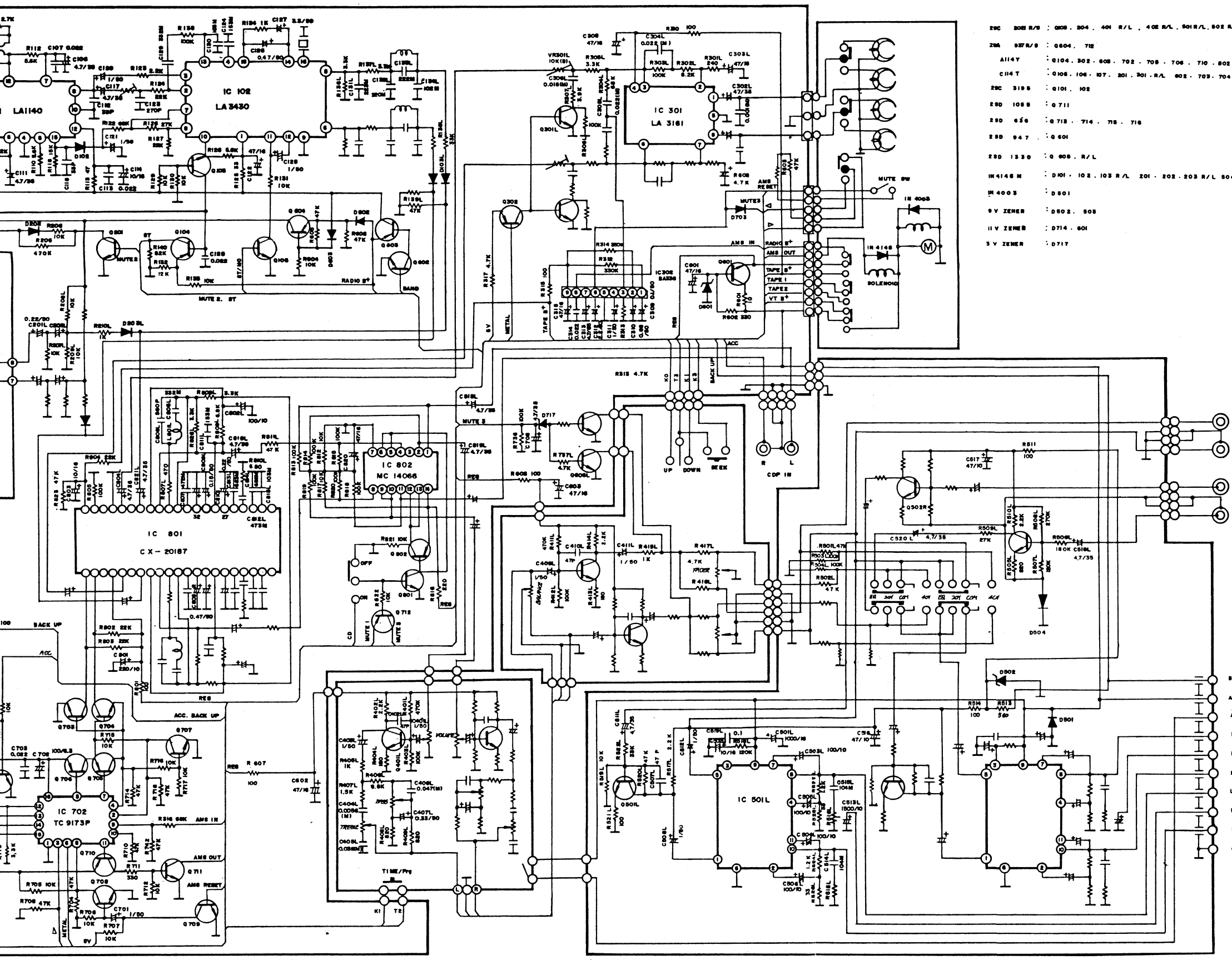

LA1140
Voltage regulator
1st
2nd
3rd
4th
5th
6th
level det
AGC drive
signal level indicate
AF muting amp
AFC Clamp
AFC
AF OUT
AGC
S-Meter
Muting Drive
Muting IN
GND

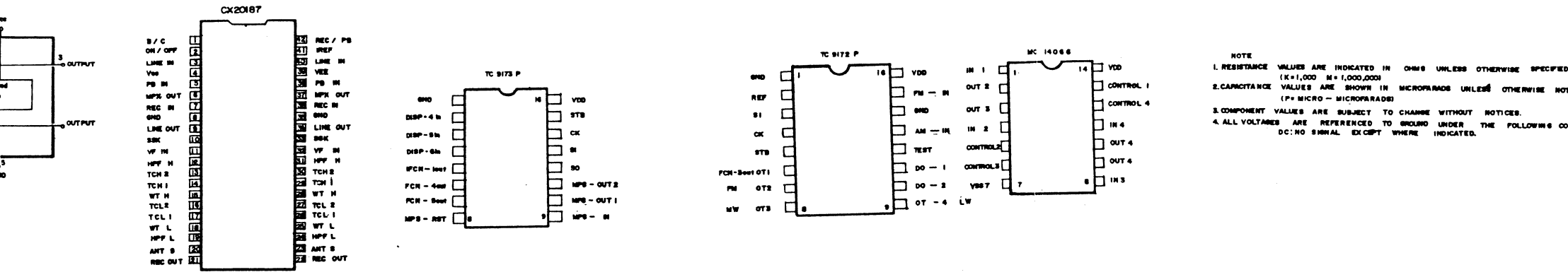

LA3161
INPUT
NF
AMP1
AMP2
Regulated Voltage Circuit
OUTPUT
GND


CX20187
S / C
ON / OFF
LINE IN
Vcc
PB IN
MPX OUT
REC IN
GND
LINE OUT
SSK
VF IN
HPF H
TCH 2
TCH 1
WT H
TCL 2
TCL 1
WT L
HPF L
ANT S
REC OUT
REC / PB
IREF
LINE IN
VEE
PB IN
MPX OUT
REC IN
GND
LINE OUT
SSK
VF IN
HPF H
TCH 2
TCH 1
WT H
TCL 2
TCL 1
WT L
HPF L
ANT S
REC OUT

Schematic Diagram

CRD210

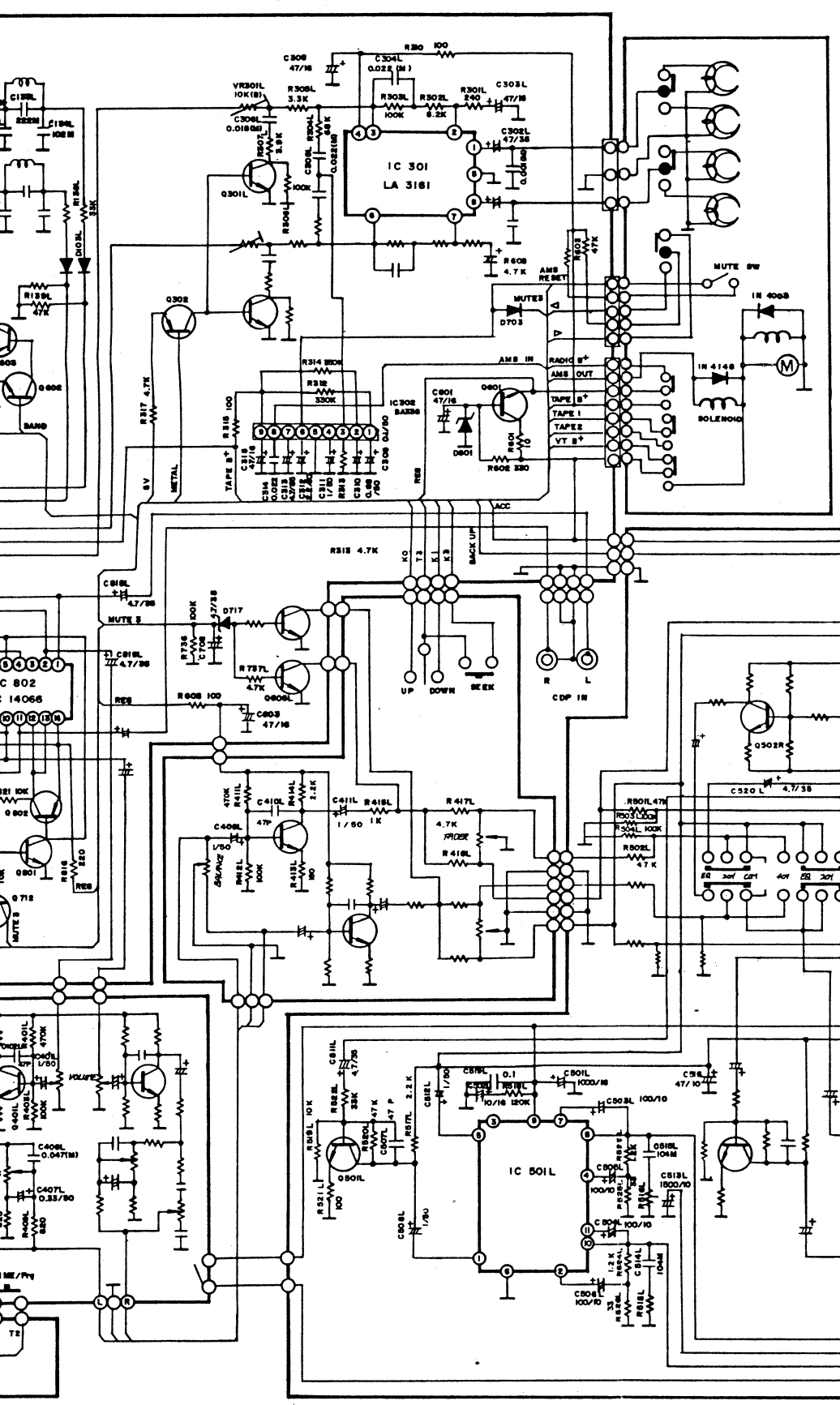




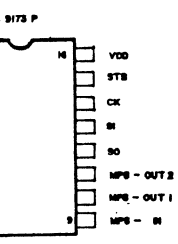
NOTE

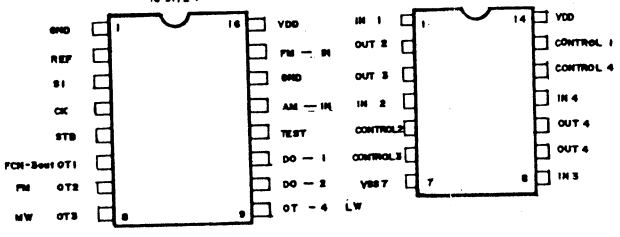
1. RESISTANCE VALUES ARE INDICATED IN OHMS UNLESS OTHERWISE SPECIFIED (K=1,000 M=1,000,000)
2. CAPACITANCE VALUES ARE SHOWN IN MICROFARADS UNLESS OTHERWISE NOTED (P=MICRO-MICROFARADS)
3. COMPONENT VALUES ARE SUBJECT TO CHANGE WITHOUT NOTICES.
4. ALL VOLTAGES ARE REFERENCED TO GROUND UNDER THE FOLLOWING CONDITIONS DC: NO SIGNAL EXCEPT WHERE INDICATED.

tic Diagram
RD210



2SC	3081 R/S	: Q305 . 304 . 401 R/L . 402 R/L . 501 R/L . 502 R/L . 701 . 707 . 708
2SA	937 R/S	: Q604 . 712
	A1147	: Q104 . 302 . 605 . 702 . 705 . 706 . 710 . 802
	C1147	: Q105 . 106 . 107 . 201 . 301 . R/L 602 . 703 . 704 . 709 . 801 .
2SC	3198	: Q101 . 102
2SD	1085	: Q711
2SD	636	: Q713 . 714 . 715 . 716
2SD	947	: Q501
2SD	1330	: Q605 . R/L
IN4148 M		: D101 . 102 . 103 R/L 201 . 202 . 203 R/L 504 . 602 . 603 701 705
IN 4003		: D501
9 V ZENER		: D502 . 503
11 V ZENER		: D714 . 601
3 V ZENER		: D717





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